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Abstract

PURPOSE:To realize epitaxial growth with economical atomic weight at high speed and at high throughput by a method wherein a substrate temperature is changed in synchronization with the timing of the supply of a raw material, a gas having a low decomposition temperature is lowered and a gas having a high decomposition temperature is supplied when the substrate temperature is raised.
CONSTITUTION:First, a controller 17 instructs lamp furnaces 15 to execute a heating operation; a temperature of a substrate 12 is raised up to 600 deg.C. During this process, the controller 17 supplies valves 16a and 16c with a pulse P1; these are opened. By this setup, H2 gas and AsH3 gas with a high decomposition temperature are supplied to the inside of a reactor 10 via a gas introduction port 13. These gases are supplied in order to protect a substrate 12. Then, after an evacuation the controller 17 stops the heating operation of the lamp furnaces 15 and sets the temperature of the substrate to 400 deg.C. The controller 17 monitors the temperature of the substrate 12 by using a temperature detector such as a thermocouple or the like; when the temperature of the substrate 12 reaches 400 deg.C, a pulse P2 is given to valves 16a and 16b; H2 gas and TMG having a low decomposition temperature are supplied to the inside of the reactor 10.